

# MONTHLY WEATHER REVIEW.

Editor: Prof. CLEVELAND ABBE.

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## INTRODUCTION.

The MONTHLY WEATHER REVIEW for November, 1900, is based on reports from about 3,099 stations furnished by employees and voluntary observers, classified as follows: regular stations of the Weather Bureau, 159; West Indian service stations, 13; special river stations, 132; special rainfall stations, 48; voluntary observers of the Weather Bureau, 2,562; Army post hospital reports, 18; United States Life-Saving Service, 9; Southern Pacific Railway Company, 96; Canadian Meteorological Service, 32; Mexican Telegraph Service, 20; Mexican voluntary stations, 7; Mexican Telegraph Company, 3. International simultaneous observations are received from a few stations and used, together with trustworthy newspaper extracts and special reports.

Special acknowledgment is made of the hearty cooperation of Prof. R. F. Stupart, Director of the Meteorological Service of the Dominion of Canada; Mr. Curtis J. Lyons, Meteorologist to the Hawaiian Government Survey, Honolulu; Señor Manuel E. Pastrana, Director of the Central Meteorological and Magnetic Observatory of Mexico; Camilo A. Gonzales, Director-General of Mexican Telegraphs; Mr. Maxwell Hall, Govern-

ment Meteorologist, Kingston, Jamaica; Capt. S. I. Kimball, Superintendent of the United States Life-Saving Service; and Commander Chapman C. Todd, Hydrographer, United States Navy.

Attention is called to the fact that the clocks and self-registers at regular Weather Bureau stations are all set to seventy-fifth meridian or eastern standard time, which is exactly five hours behind Greenwich time; as far as practicable, only this standard of time is used in the text of the REVIEW, since all Weather Bureau observations are required to be taken and recorded by it. The standards used by the public in the United States and Canada and by the voluntary observers are believed to conform generally to the modern international system of standard meridians, one hour apart, beginning with Greenwich. The Hawaiian standard meridian is  $157^{\circ} 30'$  or  $10^h 30^m$  west of Greenwich. Records of miscellaneous phenomena that are reported occasionally in other standards of time by voluntary observers or newspaper correspondents are sometimes corrected to agree with the eastern standard; otherwise, the local standard is mentioned.

## FORECASTS AND WARNINGS.

By Prof. E. B. GARRIOTT, in charge of Forecast Division.

On the morning of November 9 the following special bulletin was issued by the Chief of the Weather Bureau:

The first well-marked cold wave of the season covers the middle-western and northwestern States with a reported minimum temperature of  $12^{\circ}$  below zero at Huron, S. Dak. Freezing weather is reported to southern Kansas and southern Missouri, and snow has fallen as far south as the Ohio River. To-night the line of freezing temperature will extend over Arkansas and Tennessee, and heavy frost will occur in central and north parts of the middle and east Gulf and South Atlantic States, excepting Florida.

On the morning of the 9th heavy frost was reported in the middle and east Gulf and South Atlantic States as far south as Meridian, Miss., Montgomery, Ala., and Macon and Savannah, Ga. Light frost occurred in extreme northern Florida the morning of the 10th, and generally along the Gulf coast from Corpus Christi, Tex., to Tampa, Fla., the morning of the 13th. In each instance warnings were distributed the day before the occurrence of frost in the districts visited.

The extreme northwest was visited by several periods of severe cold, which failed, however, to extend over considerable areas. The lowest temperature of the month in that section was reached the morning of the 20th, when a minimum of  $30^{\circ}$  below zero was noted at Havre, Mont., and the line of zero temperature was traced over western South Dakota. The occurrence of these low temperatures was covered by the daily forecasts.

The Great Lakes were visited by four general storms. The first of these crossed the upper lakes on the 1st and caused wind velocities of 40 to 50 miles an hour on the lower lakes.

From the 7th to the 9th the weather was stormy over the Lake region, but this period was not marked by gales of exceptional severity. During the 12th and 13th high winds and snow prevailed over the lakes. A storm which developed great intensity swept the Lake region on the 20th and 21st; over the lower lakes the maximum wind velocities on the 21st ranged from 60 to 80 miles an hour. During the 27th a storm moved northeastward over the Atlantic coast States, causing violent gales over the lower lakes and along the Atlantic coast.

Notwithstanding the ample warnings that were issued the lake storms of the month resulted in a number of casualties.

The storm of the 12-13th passed eastward to the St. Lawrence Valley and was followed on the 14th by snow from northern New York over the Lake region and the Northwest. In western New York the snowfall of the 14th and 15th was sufficiently heavy to delay railway traffic.

The period from the 17th to the 20th was one of unusual cold and heavy snow in the northern Rocky Mountain districts, and during the 20th and 21st the snow area extended over the middle Plateau region. The Atlantic coast and lower lake storm of the 26th and 27th was attended by freshets in the streams of New York, and by heavy snow in the northern part of that State.

On the Pacific coast the first important storm of the month appeared on the 16th, and this storm inaugurated a week of rain and high winds along the entire Pacific coast. In parts of California the heavy rains resulted in damaging floods.